Science Flight Report
Operation Ice Bridge Spring 2010

UAF Alaska Flight No 1
Mission Plan: Stikine Icefield

Flight Report Summary

Aircraft	**DHC-3 Otter**
Flight Number	UAF-1
Flight Request	10M014
Flight Hours	8.0
Take off time	08:00:00.00 Z from Ultima Thule Outfitters Lodge
Landing time	16:00:00.00 Z at Wrangell
Date	Wednesday, May 16 2010, Day of Year 136
Purpose of Flight	LiDAR surveys of glaciers within the Stikine Icefield, SE Alaska.
Aircraft Status	Airworthy.
Sensor Status	operational.
Significant Issues	Runway closed for painting at Petersburg.
Accomplishments	• LiDAR profiles of Stikine Icefield, including the LeConte, Baird, Dawes, Triumph and Flood Glaciers.. • Conducted one pass over runway at Wrangell airport for LiDAR instrument calibration.
Planned Events	• Tomorrow we plan to complete the surveys of the Stikine Icefield.

Science Data Report Summary

This mission performed LiDAR surveys of glaciers the Stikine Icefield, including the LeConte, Baird, Dawes, Triumph and Flood Glaciers.
LiDAR data were collected at a height of 500-650 meters above the glacier surface, and mapped a 0.5 km wide swath along the centerline of the glaciers. This swath map consists of measurements from individual laser shot points on a roughly 1 meter by 1 meter grid. The individual point measurements of the glacier surface latitude, longitude and elevation have an accuracy of approximately ±10 cm.
Geographic keywords: (Stikine Icefield, SE Alaska)
Repeat Mission: yes (2009, 2000, 1995)

Instrument	Instrument Operational		Data Volume for days 136+137	Instrument Issues
	Target area	Entire Flight		
UAF LiDAR	Yes	No	1.85 GB in raw binary format	None
GPS	Yes	Yes	832 MB in raw binary format	None
IMU	Yes	Yes	379 MB in raw binary format	None

Mission Log (Chris Larsen)

Today's mission is LiDAR surveys of glaciers the Stikine Icefield, including the LeConte, Baird, Dawes, Triumph and Flood Glaciers. The weather remained perfect throughout the entire day.
The flight was ended in Wrangell, for an overnight rest and refuel. Initially we had planned on Petersburg, but the when we began our approach we were informed that the runway was closed for painting. A very small diversion to nearby Wrangell solved that problem, where we found food, fuel and lodging. Weather and forecast checks in the evening held promise for continued excellent weather. We plan to complete the survey flights over the Stikine Icefield tomorrow.

Individual instruments on board the aircraft:
LiDAR: The UAF LiDAR systems worked well.

GPS: System worked normally. No problems.

IMU: System worked well. No issues.

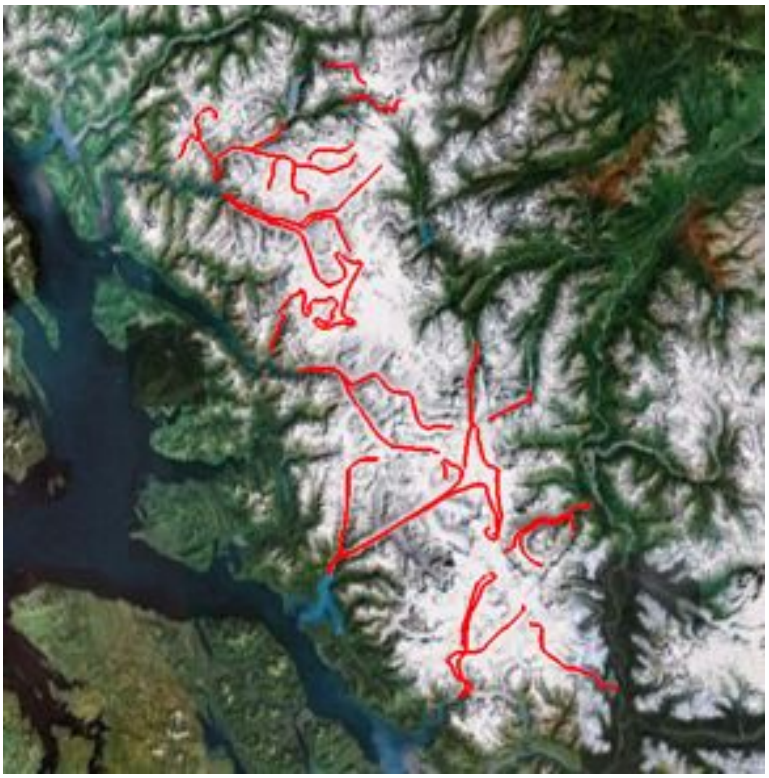

Figure 1: LiDAR ground tracks over Stikine Icefield for days 136+137 (May 16-17, 2010).

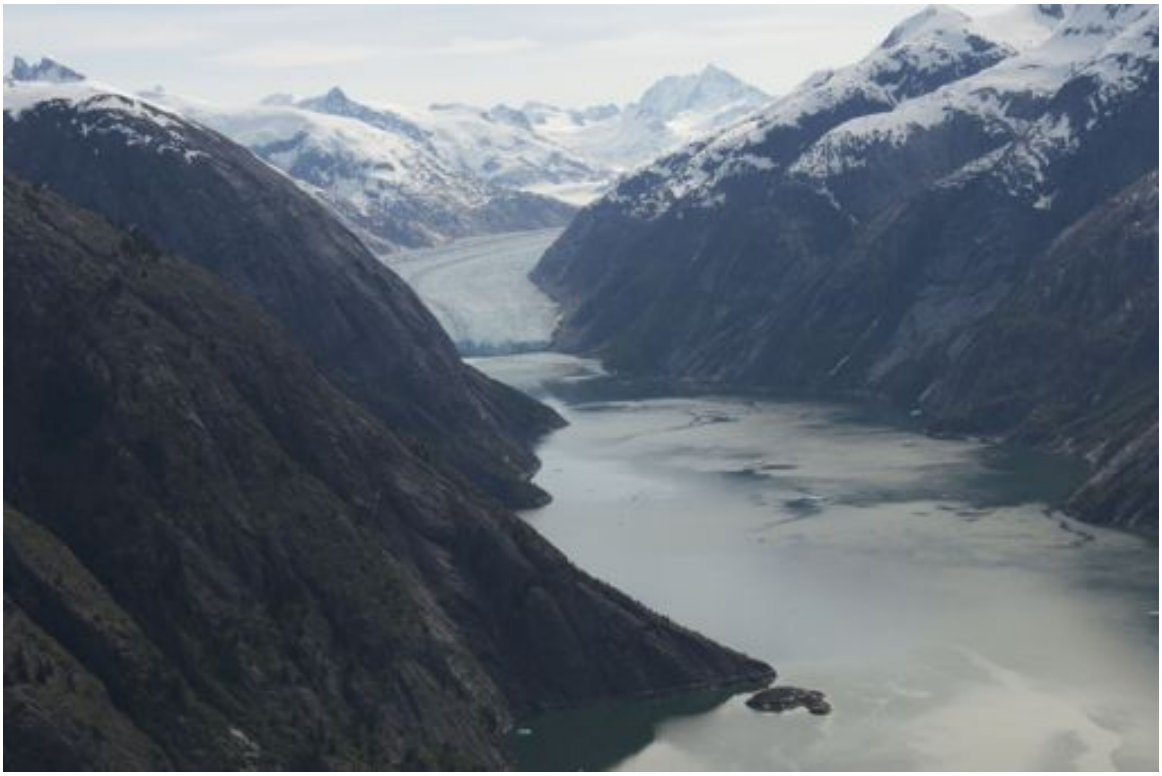

Figure 2: The Dawes Glacier tidewater terminus.

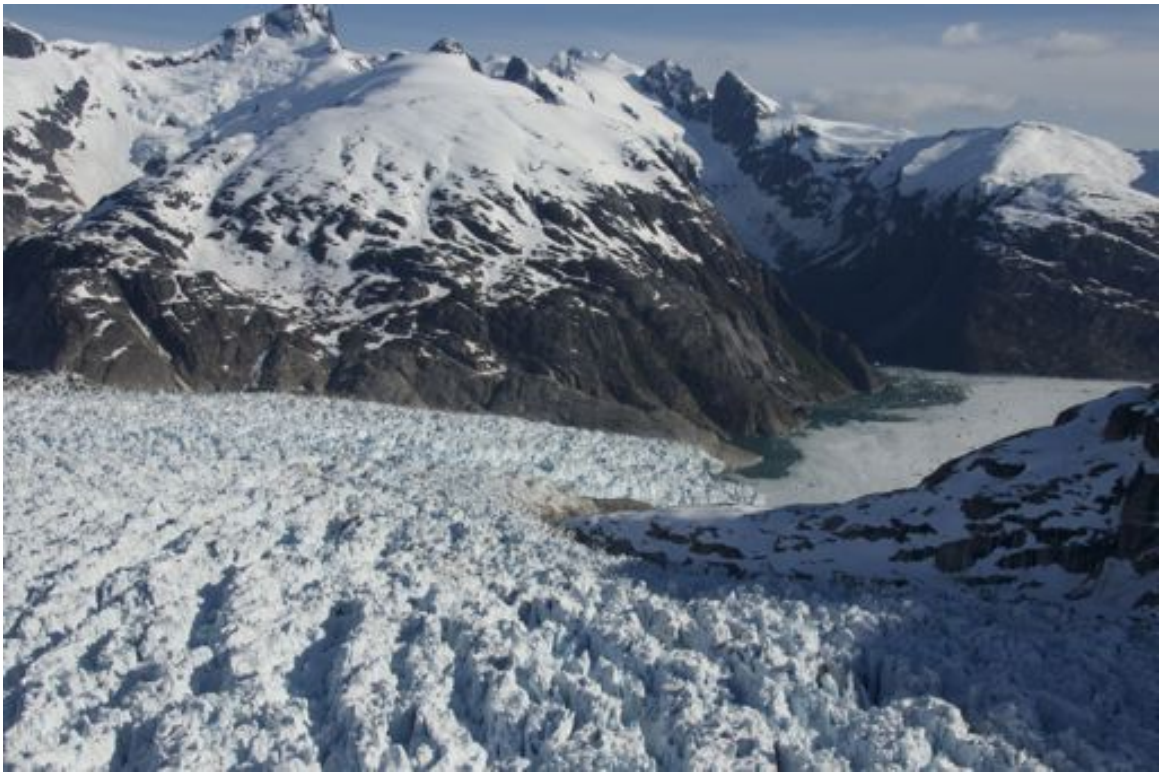

Figure 3: Sawyer Glacier tidewater terminus.